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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/674,931	11/08/2000	Atsushi Yamamoto	001348	8056

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EXAMINER

BALSIS, SHAY L

ART UNIT PAPER NUMBER

1744

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/674,931

Applicant(s)

YAMAMOTO ET AL.

Examiner

Shay L. Balsis.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5,8,9,12-15 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,8,9,12-15 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION***Drawings***

The applicant mailed a replacement figure 3 on 7//17/03, however the applicant needs to resubmit the corrected figure 3 and the original figures 4 and 5 on the same sheet. When submitting replacement figures, the entire sheet needs to be replaced, not just the drawing that needs correction. Therefore, sheet 2 of 17 needs to be resubmitted.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 8, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaufman et al. (USPN 4570282) in view of Monz (EP 0716573) in view of Hassell et al. (USPN 6202241) and further in view of Bredall et al. (USPN 5396678).

Kaufman teaches a toothbrush comprising tufting holes that are inclined in directions perpendicular to the lengthwise direction of the handle. The bristles in the inclined holes are tilted towards the inside, at an inclination of 10 degrees, so as to have the tufts support one another (30, 38). Each pair of tufts that are inclined towards each other form a converging block. The tufting holes account for 16-22 mm in a direction of the handle length (col. 4, lines 30-65). Figure 1 show the proportion of the width tufting holes to the length of tufting holes. Since the length of the tufting holes is between 16 and 22 mm, it can be determined that the width of the tufting holes is less than half the length and therefore would be 8 mm or less. The distance between the bases of the pairs of

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tufts is approximately 2.5 mm (col. 4, lines 30-65). Kaufman teaches all the essential elements of the claimed invention however fails to teach that the tufts are rectangular or elliptical, that the tufts have an end portion that is worked in to a v-shape or that the tufts are attached by anchors that are parallel to a center line along a lengthwise direction.

Monz teaches a toothbrush comprising elliptical tufts that extend in a lengthwise direction of the handle length. Hassell et al. teaches a toothbrush comprising a row of bristle tufts that have their ends worked into a V-shape (39), wherein the inclined faces intersect at a peak directed in a direction in which the tufts support one another. Bredall teaches a toothbrush, which comprises bristles that are anchored in place by anchors that are parallel to a center line along a lengthwise direction. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use elliptical bristle tufts instead of circular tufts as taught by Monz, with V-shaped tuft ends with inclined faces that intersect as a peak as taught by Hassell, that are secured in the tufting hole with anchors that run parallel to a center longitudinal line as taught by Bredall. Circular tufts are disadvantageous because they tufts have substantially the same stiffness when the head is being moved across the teeth parallel to the gum line. It is desirable that when brushing, that bristles that are less stiff be used because they will prevent injury to the gum line. A way to achieve less stiffness is by using elongated tufts of bristles, i.e. elliptical or rectangular (Monz, col. 1, lines 31-49). Additionally, the V-shaped ends are less harmful to the gum tissue than conventional bristles (Hassell, col. 3, lines 58-60) and the anchors can be orientated either parallel or perpendicular to the longitudinal axis as shown by Bredall (Bredall, figure 2, col. 5, lines 5-37).

Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaufman et al. (USPN 4570282), Monz (EP 0716573), Hassell et al. (USPN 6202241) and Bredall et al.

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(USPN 5396678) as applied to claim 1 above and further in view of Curtis et al. (USPN 5446940)

Kaufman, Monz, Hassell and Bredall teach all the essential elements of the claimed invention however, the references fails to teach tufting holes that are rectangular in shape, with short side dimensions of 0.8 to 2.0 mm and long side dimensions of 1.5 to 5.0 mm. Curtis teaches a toothbrush with rectangular tufting holes that accommodate rectangular tufts. The dimensions of the tuft are 0.047 in (1.193 mm) on the shortest side and 0.060 in (1.52 mm) on the longest side (col. 6, lines 38-47). As shown in figure 7 of Curtis, the longest side of the tuft hole is in the lengthwise direction of the handle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use rectangular tufts because rectangular tufts sweep plaque off tooth surfaces and also optimize the resiliency as compared to round tufts as claimed.

Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaufman, Monz, Hassell and Bredall as applied to claim 1 above and further in view of Solanki et al. (USPN 6314605).

With regards to claim 9, Kaufman, Monz, Hassell and Bredall teach all the essential elements of the claimed invention however, the references fail to teach rows of converging blocks that are offset from each other. Solanki et al. teaches a toothbrush with bristles tufts offset from each other as shown in figure 4. It would be obvious to one of ordinary skill in the art to have the paired bristle tufts or converging blocks in one row offset from the converging blocks in the next row in Kaufman, Monz, Hassell and Bredall's invention as shown in Solanki's invention to allow the tufts or converging blocks to operate independently of each other to avoid obstruction from other tufts or converging blocks. Thus, allowing the tufts to penetrate better into interproximal areas (Solanski, col. 4, lines 27-38).

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With regards to claim 12, Kaufman, Monz, Hassell and Bredall teach all the essential elements of the claimed invention however, the references fail to teach bristles that are not lined up on one straight line in the lengthwise direction of the handle. Solanki et al. teaches a toothbrush with bristles tufts offset from each other as shown in figure 4. This in turn teaches bristles that are not lined up in a straight line in the lengthwise direction of the handle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to offset the bristles as taught by Solanki to allow the bristles to operate independently of each other to avoid obstruction from other tufts or converging blocks. Thus, allowing the tufts to penetrate better into interproximal areas (Solanski, col. 4, lines 27-38).

Allowable Subject Matter

Claim 21 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claim 21 teach the limitation that there are five rows of tufts in the lengthwise direction with rows one and five forming a converging block, rows tow and four forming two converging blocks and row three forming one converging block. None of the prior art teaches the exact number of converging blocks per row.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shay L. Balsis whose telephone number is 571-272-1268. The examiner can normally be reached on 7:30-5:00 M-Th, alternating F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Kim can be reached on 571-272-1142. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Slb
7/20/05



MARK SPISICH
PRIMARY EXAMINER
GROUP 3400-

1706